

## **APPENDIX G**

# ENHANCED RF WIRELESS ADAPTIVE POWER PROVISIONING SYSTEM

Inventors: Tal Dayan, Ofer Goren, Dan Kikinis, Yehuda Goren  
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## Background

With the advent of wireless power services commercially available to the public, there will be demand for such services in public places such as, for example, coffee stops, bus stations, air ports, hotel lobbies, buses, even airplanes, etc. Even though power consumed per user is not that great, when multiplied by millions of users, the cost of consumed power can become a valid business consideration. Also, this technology lends itself to allowing high bandwidth network communications, and therefore, a billing mechanism may be desired.

What is clearly needed is a method that allows an established account user to have a billing mechanism to bill him for actual usage or for a flat fee, and in any case to verify the permissions that the user has and accordingly enable and disable access to power, the network, etc.

## Description of the Embodiment

Figure 1 shows a table 101 in a coffee shop 100 that has, for example, four sections 102 a-d. On one of the sections (section 102b) the user has installed himself by setting down his notebook 105, his cell phone 106, and half a cup of cappuccino 110.

Figure 2 is an overview diagram of the network connectivity required. In this example, only cell phone 106 is shown, sitting on table section 102b; however, it is clear that more than one device may be connected at one time. Table section 102b is connected to intelligent controller 201, which has access to a power source 203 and also access to network 204, typically going through a router/firewall device 205 and Internet connection 211 to the Internet 210, from where a connection 212 leads to a server 220 that maintains the user's account.

According to the user's preferences an account has been set up on the server that describes the features of the account, such as power, networking, etc., and the means of payment, for example, by time and/or actual power usage and/or megabytes of data uploaded or downloaded. All this data for each account is on file in a database (not shown) on the server.

The account services may be charged as a flat monthly fee, and a record of the megabytes used kept only for internal usage, or the account may be billed by megabytes transferred. The fee structures may be in place for power usage: it may be billed as a flat fee for usage, or the fees may be on an hourly basis, where, for example, the user

gets X hours of charging time, regardless of whether he uses the power for one or for multiple devices.

To invoke the account services, the user may go to a Web site where he can register his devices to his account. Hence when the device ID comes up, the server knows which account permissions to retrieve.

Figure 3 shows a simplified flow diagram of the process of the novel art of this disclosure. In step 301, a device is set on the table section. In step 302, the presence of the device is detected. In step 303 the ID is obtained from the device, as described above. In step 304, that ID is sent to the server and is looked up to identify the user account. Then in step 305, according to the account permissions, a record that OKs the usage and gives limits, rates, etc., is sent back and received. In step 306, the power and/or network restrictions for an unauthorized user are lifted, and the user is free to use power and networking services provided by his account for his device.

The structure of the database is not described here in detail, but no special technique is required. It is well known in the art how to design databases that can look up, for example, an ID that is associated with an account and can obtain account-related information.

It is clear that many modifications and variations of this embodiment may be made by one skilled in the art without departing from the spirit of the novelty of the art of this disclosure.

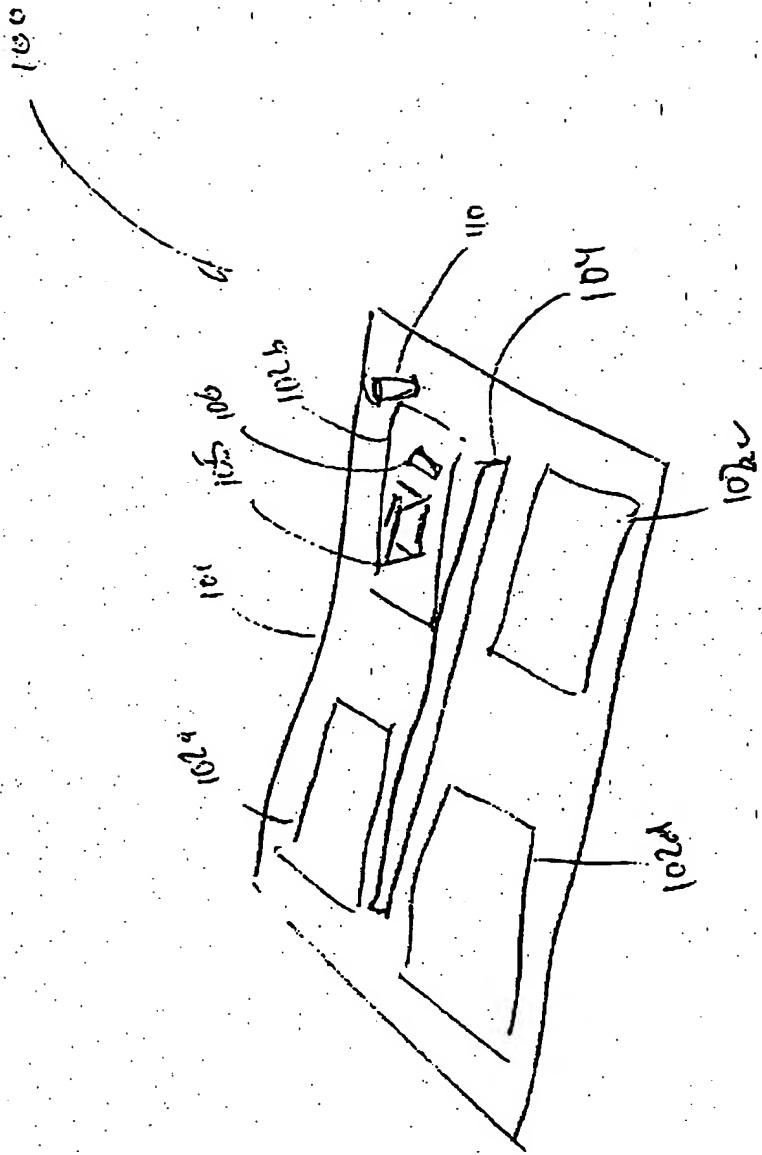
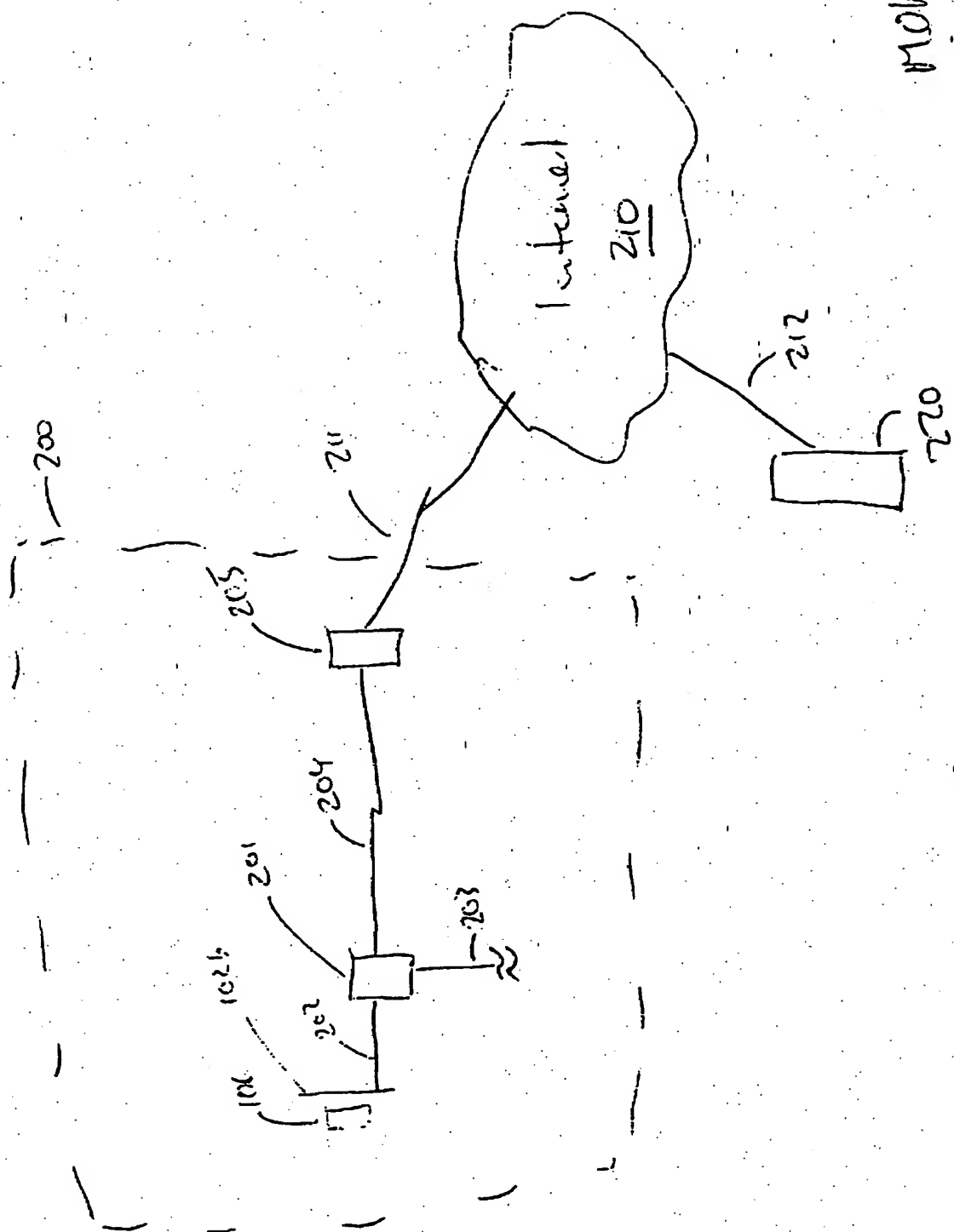
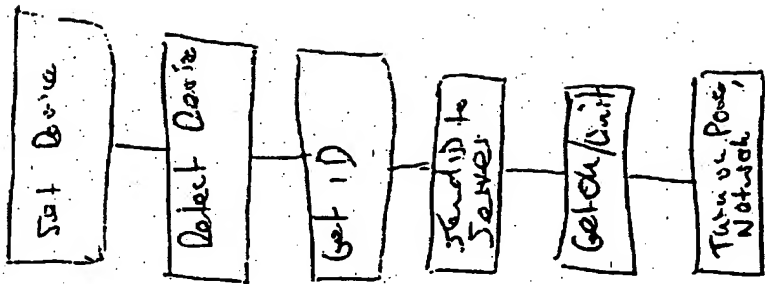


Fig. 1

How



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How?

Fig 3